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COVER: All over Virginia, from the Eastern Shore to the wider valleys of the high mountain country, the lovely redwinged blackbird sings his sweet "kon-ka-ree" song wherever marshy places with reeds and cattails are to be found. Our artist: John W. Taylor, Edgewater, Maryland.

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EDITORIAL

These Are the Days

THE refrain of a popular song repeatedly laments, "Those were the days, my friend." But as winter recedes and April comes to pass one is tempted to object, "*These are* the days!"

Dawn comes early, and is greeted with a wild euphony of music and chatter as robin and wren, catbird and cardinal, and all the rest, sort themselves out and stake their territorial claims by the sheer power and persistence of their vocalizations.

In the forest great bearded gobblers roar their challenge and chide their reluctant mates, and in so doing they also call forth in the wee hours a special breed of enthralled men and women who would match wits with the strutting toms and test their own skill at making turkey talk.

Trout streams brimful of rainbows, brooks and browns, and gorged on melting snow and spring rain, tumble from pool to pool and add their own special music to the sounds of the season. Silvery hordes leave the sea and head for ancestral spawning grounds, to be met along the way by joyous anglers armed with tiny jigs and spinners and ultralight tackle.

Waterfowl stream toward northern prairie pothole country, and where ill-advised works of man have not interfered too much they will find water for nesting and brood rearing.

Shadbush, redbud and dogwood, trees, shrubs and lesser flowering plants that carpet meadow and forest floor rush into bloom, and a mantle of sheer beauty is laid upon the land.

Spring reminds that while man leans heavily upon the quality of the natural environment for the quality of his existence, and ultimately upon forces and processes beyond himself for his very survival, yet mankind is hardly indispensable *to* the environment or the natural processes upon which he depends. They are not his creation, but rather he is theirs. We experience in spring the interaction of sun, soil, water, seed, buds, and the tremendous and mysterious urgency of life to renew and perpetuate itself. We can, and often do, interfere. We can, and often do, modify and manipulate our environment, not always for the better. We can, and do, poison soils and permit their erosion, pollute water and air, and disrupt and destroy wildlife populations by needless elimination of their habitat. Each spring we can see a powerful and persistent creative force heal some of the scars.

In our urbanizing society it is all too easy to lose contact with the outdoors that lies beyond confining walls and traffic jams. Yet such contact is essential if we ever are to achieve a state of harmony with our natural environment, and a mode of coexistence with the other creatures who are our fellow travelers on this planet, for who cares about preserving that which he never sees or does not appreciate?

We need to take time out to visit the quiet places where only the voices of birds and brooks and wind in the trees are heard, and to stand in wonder and awe at the earth clothed in the garb of spring. And these are the days, my friend! These *are* the days!—J. F. Mc.

LETTERS

Wants To Help

ANOTHER hunting season has come to an end. On that last day as the sun goes down, and darkness covers the woods, we all feel a little sad, but on the long drive back home we start making plans for next year.

I hunt with a bunch of good men, and we all take our hunting very seriously. I think we have come up with a good idea. We know we cannot expect to keep on enjoying good hunting every year unless something is done to maintain the game supply. We also know it takes money for conservation people to work and find new ways to help keep a good supply of game in the state. Why not have a decal that we can put on our autos, something to let people know that we not only hunt game, but also help preserve and replenish the supply?

Some people think we are heartless because we hunt. Let's let them know, by a sticker or decal on the window, that we are helping produce what we kill. This sticker or decal could bring in some extra money for conservation, could cost a dollar or more, and I already have five customers.

I know *Virginia Wildlife* has a lot of subscribers, so why not ask them what they think of this idea?

Thanks for printing my letter last year (December, 1968, issue) on rabbit hunting. We only killed 65 rabbits last fall, about half what we did the year before.

Herbert R. Walker
Hampton

All right, subscribers, what do you think of the idea?—Ed.

A Big One

I am enclosing a picture of myself which was taken in the Occoquan Creek area of Fairfax County while a friend and I were out looking over a forested area near Burke Lake. My friend, Gil Stafford, an amateur photographer, took the picture. The snake I was holding up was one of the largest black snakes I have ever encountered. It was between eight and nine feet long. This proves that the reptiles are not all hibernating at the beginning of hunting season, as it was very late in October and fairly cold when we ran into this snake. He was released to go his merry way, as black snakes are a boon rather than a danger to man.

Daniel R. Kruk
Alexandria

SPRING IS FOR TURKEYS

By JACK RANDOLPH
Springfield

TO he able to call a turkey as well as Ellsworth Hatch of Petershurg is a noble ambition. Mr. Hatch uses a mouth call to produce the seductive yelps and squcals that puts wild turkey in his oven most every season. He calls so well that I wouldn't bc surprised if the young toms came to his back porch every spring for lessons.

Once I asked him what was the closest he ever called a turkey. This was a mistake.

"I'll tell ya," he said. "One fall mornin' I stepped into the woods at the edge of the field and gave a few yelps and almost at once a hen commenced to answer. 'Kow, kow, kow,' she said, all the time a runnin' right towards me. She was comin' so fast I didn't need to call anymore, so I just hunkered down behind a fallen log. And do you know what? That turkey ran clean up to the other side of the log."

"And then you shot her?" I said.

"Naw," answered Mr. Hatch. "I just reached under the log and grabbed her by the legs."

"Gee, that was easy," I offered.

"Wasn't so easy," replied Hatch. "The old hen was too big. I couldn't pull her through to my side of the log."

"So you wound up shootin' her?" I guessed.

"No such thing," he said with a twinkle in his eye. "I let her go and called her around to my side and grahbed her again."

While it's doubtful that many of us can call turkeys as well as Mr. Hatch and many of the vanishing breed of old dyed-in-the-wool turkey hunters that one finds scattered around the Old Dominion like so many rare gems, most of us would like to be able to call up a turkey once in a while. The problem is not getting the practice, but rather, finding an audience. There are no critics of music that can rival wild turkeys for detecting a false note.

Unless you are working with a good turkey dog, finding turkeys during the fall season is a hit or miss husiness. Mostly miss. The woods are full of other hunters and dogs, and the turkeys are scattered. With all the shooting going on the birds are as nervous as a tomcat with a nine foot tail in a room full of rocking chairs. Unless you are working with a gang of turkeys you flushed yourself or were put up by your dogs, you have no way of knowing whether or not there's a turkey within earshot of your call. Not knowing this, it's tricky to figure out if your eall is authentic enough to fool a bird or if there just aren't any birds around to fool.

The spring turkey hunter seldom has these frustrations. At this time of the year the gobblers havc their minds on things other than hunters. Instead of doing their best to act absent, the gobhler in the spring wants the whole turkey world to know that he's around. Don't for one minute think that, even in the spring, a gohhler is anybody's fool, but if he's ever going to make a mistake, spring is usually the time he makes it.

We do most of our spring gobbler hunting at Camp A. P. Hill in Caroline County. Turkeys are not scarcc on this tract of 70.000 acres of prime hunting land. In fact I've seldom visited the Camp without seeing turkeys or their fresh sign. I remember one morning in particular when an obliging gobbler walked into a field and stood near the road while I was taking my son on a bird watching trip.

During the spring turkey season I've never once hunted at A.P. Hill that I haven't located ealling birds and enjoyed an interesting hunt. This is the beauty of spring hunting. The birds are easy to find and you know you have an audience.

Hunters use various methods for locating gobblers in the spring. Some claim that a hoot of an owl will bring a response, while others carry a crow call for the same purpose. I've heard them answer the slam of a car door, the hoot of a distant train, or the sound of a horn on highway 301. Frankly, we've never been forced to do anything to find hirds except listen.

Hunters who are familiar with their areas generally know where they are most likely to find gobblers. If they are not familiar with the area, the hest places to start listening is near the tall timber, particularly near stands of tall pines.

Spring hunting still places stringent requirements on the hunter's ability to use his call. Although it may seem easier to call turkeys in the spring, it doesn't always work out that way. In fact, calling turkeys in the spring may be a bit more demanding.

Last season two friends of mine, Bob Heide and his son, loeated a willing gobbler at A.P. Hill. The big bird answered their first call and almost without hesitation made a beeline toward their waiting guns. Bob reported that at one point that gobbler was calling within 10 yards of him, but he couldn't see to shoot because of new foliage on the underbrush. The bird strutted around them for 10 minutes within easy shooting range, without either one as much as seeing him. Finally, one of them inadvertently coughed and the turkey disappeared as only wild turkeys can.

Several times last season A.P. Hill's bountiful deer population fouled up our turkey hunt. Sometimes I believe the deer know exactly what's afoot and are in cahoots with the turkeys.

On one oceasion I heard a hird gobble quite far back in the woods. Quietly I started to sneak down an old woods road hoping to get within ealling range. I had almost made it when I surprised a deer.

Instead of sneaking away silently as deer usually do, this one had to make a production out of it. If he snorted once he snorted 20 times. He snorted every cotton pickin' turkey gobbler clean into the next county. I hate to tell this on myself, but this happened again at A.P. Hill only a couple of days later. This time I had a gobbler coming my way when a deer got into the act. He, too, was another rip snorter. I only hope they try that snorting business in deer season!

Although it's not conducive to bagging turkeys, I usually bring my 9-year-old son along. For his age, hc's been in on a lot of hunting and fishing trips, but he gets a special kick out of spring turkey hunting. The weather is usually pleasant and the woods are beautiful at this time of the year. A.P.

Hill is particularly pretty then, with bursts of dogwood throughout the pale green forests and the roadways lined with lavendar walnut blossoms and the blue-purple shade of wisteria gone wild, a reminder of some early farm wife's love for color. The boy also is thrilled to hear the gobblers, and enjoys my frustrated efforts to outwit them. On the last day of the 1968 season, he and I enjoyed a most unusual hunt.

We entered the woods in the half light of an overcast dawn. It had rained and we were able to move quietly down an overgrown woods road. We had walked only a couple of hundred yards when the gentle, almost tentative yelps of a hen floated through the woods. John tugged at my sleeve and

L. L. Rue III photo

In the spring the turkey gobbler wants the whole turkey world to know he is around, but he is still nobody's fool and calling such a bird within range will take all the hunter's skill and a bit of luck as well.

I bent to hear his whisper.

"Someone's calling a turkey," he said, half in disgust and meaning we should look for another place to hunt.

I knew there were no other cars in the area so I answered, "No, son, I believe that is really a hen. We had best sit down right here and see what happens."

The hen continued to call while I made careful mental notes trying to burn her song firmly into my mind, so I could closely imitate it when I used the call. John tugged at my sleeve again.

"Try your call, Daddy," he suggested.

"No, John," I admonished. "That hen is doing a better job than I could ever do. Just wait a while and a gobbler will answer soon."

Suddenly there came an explosive gobble from a ridge a hundred yards in front of us. We settled deeper into our seats as the lady turkey behind us gave an instant reply.

The gobbler again roared, but apparently from the same location. Nevertheless, we strained our eyes looking for the serpentine head of the gobbler snaking through the leafy underbrush. Instead of seeing him we were disappointed to hear him gobble again, now definitely farther away. Apparently another hen was calling him in the opposite direction.

I reached for my call. Not that my hen yelp would be more appealing than the real thing, but maybe if I imitated another gobbler, the first one would take offense and come to do battle.

Holding my cedar box call loosely in my hand, I shook it vigorously, producing a fairly respectable challenge. The distant gobbler threw down his gauntlet and literally screamed his disapproval.

We could almost hear him put on his brakes as he did an about face and came charging and gobbling over the ridge. John was all eyes as he settled even deeper into the leaves. My hands were damp and my arms a little shaky as I checked the safety and half raised the shotgun to my shoulder.

The turkey was close now. My throat was bone dry as I strained to see him. I knew it was any second now: I could hear him gobbling every time his left foot hit the ground.

I could feel the blood pounding in my temples. I knew the gobbler would hear my heart beat. Gun at the shoulder, I was as tense as a turkey hunter can get. I flinched as the shot exploded through the hills. Not from my gun came the shot, but rather from that of some unseen hunter more than a mile away. It might as well have been my shot, for as it echoed through the low hills the forest fell strangely silent.

The turkey gobbled no more, nor did the hen yelp. Even the songbirds ceased their morning songs while we sat there still shaken from our recent experience.

We continued our silence as the sun broke the horizon and the songbirds greeted it, first with tentative chirps and later with their full songs of spring. No turkey joined the chorus, however.

After a while we left, still silent as we walked to the car burdened only with our memories of the great hunts we had shared those few past mornings. As we neared the car John looked up smiling and said, "Gee, Dad, that was great."

And it was.

The spring turkey hunt is a bonus hunt in every sense of the word. The harvest of excess turkey gobblers does not affect the annual production of young birds, which is the main factor in determining each fall's wild turkey population. Turkeys are hatched with approximately a 50-50 ratio between the sexes. However, turkeys are polygamous and each gobbler adopts a harem of several hens. Generally the bigger, stronger birds run the younger gobblers off, and the old-timers, which are more likely to be bagged in the spring during the gobbling season, are huge, trophy birds. There is no lack of replacement from among the younger toms when the older gobblers are removed.

The spring season is also a bonus because it extends our hunting year and provides us an opportunity to get into the woods at an especially pleasant time of the year. I've always envied the Germans who hunt their great game bird, the auerhahn, in the spring. Now we have our own version.

Nothing is so rare as a day in May—turkey hunting.

When Bluegills Fight Like Muskies

By BILL COCHRAN
Roanoke

ONE day last summer when it had become so hot that you could almost hear the grasshoppers panting in the weeds, I happened to meet an angling pal of mine who was plenty mad.

"It's time to quit fishing," he snorted. "The bass have all gone to the bottom of the lakes, clamped their mouths shut and aren't about to budge until cooler weather. The trout are as wild as Indians, and who can blame them, what with the water so clear and only ankle deep."

He was right. Fishing had gotten tough during the hot, dry, dog days, like it always does. But give up fishing?

I told my friend that I had found a way to escape the heat, to catch plenty of fish and to have great fun doing it. The secret is to fish with an ultralight spinning outfit—a rod not much bigger than a matchstick, line the size of cobweb and lures no larger than your little fingernail: With this tackle, no matter how hot it gets, no matter how stubborn the big bass become, no matter how wild the lunker trout grow, no matter how heavy the fishing pressure is, no matter how low the water gets—despite these handicaps—you can catch fish—often plenty of them.

As if to prove my point, that very afternoon I launched my johnboat in the upper James River. Onto my skimpy 1⅞ ounce rod and tiny Alcedo Micron reel, seemingly hardly big enough to take away from its mother, I tied a fly and spinner combination. From the side of a bluegill I trimmed a piece of center cut about one inch long, one-fourth inch wide and one-eight inch thick and affixed it to the hook like you would a piece of porkrind.

With this outfit, I caught scrappy, red-breasted sunfish as big as your hand and several rip-snorting smallmouth bass. The fish weren't lunkers, admittedly, but on ultralight tackle, and in the river where they could use the current to their advantage, they fought like devils. The drag on my little reel sang with each catch, and it was sweet music.

Do you see what I was doing? I was passing up those

Small fish like these James River sunfish can fight like lunkers on ultralight tackle.

bigger, harder to catch fish that were sticking stubbornly to the bottom. I was settling for smaller, quicker-to-strike fish and my little featherweight tackle was making them a challenging, worthy foe. You see, bluegills, sunfish, rock bass, crappie, young blackbass, even chubs, can suddenly steal the wrath of a muskie when you go after them with ultralight gear. Even small fish feel like a trophy. Hard fished streams and lakes become virgin water.

But if I were to stop here, I would be misleading you about ultralight fishing. It does more than turn little fish into big fighters. On the average, it is true, fish caught with ultralight tackle will run smaller than those taken on conventional tackle. But not always, and this is important to note.

In addition to the increased sport it offers, ultralight has some decided advantages over other tackle. It is great for fishing stocked trout streams, for example, especially after the rush of opening week. It can mean the difference in catching a trout or not. How?

For one thing, the tiny lures are about the size of natural foods and are most attractive to trout. You can, and should cast them upstream and they will flow with the current in a realistic, tantalizing way, just like natural food passes downstream. Normally, you can seldom do this effectively with conventional spinning tackle since the larger lures are likely to snag rocks or the creek bottom, especially during times of low water.

Then, too, the line, just two to four pounds, is nearly invisible when it is in the water. The tiny lure falls into the stream with little disturbance, then wobbles, weaves and

This ultralight rod is bowed and dancing under the pressure of a fighting panfish.

Tiny bucktail jigs and ultralight tackle are a great combination for taking crappie.

spins its way downstream. Trout see nothing but something to eat, so they dash out and gulp it down.

Ultralight gear works wonders during periods of low water. You can reach every pool, pocket and riffle in a stream making long casts that keep you well out of sight. The tiny lure will not frighten a trout like a gob of worms or conventional lure splashing into a low water pool. Since it is easy to keep a tight line with an ultralight outfit, strikes are almost sure to connect.

Ultralight tackle has been in this country a dozen years or more, yet, surprisingly, many fishermen are yet to discover it. This, too, adds to its effectiveness since the tiny lures are still novel to the fish and, thus, more likely to fool them. Such tackle is great on the Jackson, Bullpasture, Dan and Smith rivers which receive heavy in-season stocking of trout.

More than one day, ultralight equipment has kept me from going home skunked. It did the first time I tried it. That was several years ago at Gaston Reservoir.

I had spent all morning fishing with little success. At noon, I decided to call it quits. But at the dock I met a tall, friendly man with a weathered face, Sam Snead hat, and battered tackle box. One look and you could tell he was a good fisherman.

He was Dave Goforth, from Greensboro, North Carolina, a man who had developed several very effective ultralight lures. Dave invited me to go along with him for the afternoon.

"They aren't hitting, but I guess I can give them another try," I said.

Dave had two ultralight outfits aboard his boat. 'Try this," he said, handing me one. It felt like a toy in my hand.

Dave began waving the other, like a magic wand, and started catching fish, one on almost every cast. I began catching fish also where, shortly before, I had caught none. Suddenly Dave hooked into something bigger than the rest. The little rod bowed like a horseshoe. The reel whined. The line cut the water like a knife. Dave grinned from ear to ear. He worked the rod artistically, first turning it one way, then another, like a musician directing a symphony orchestra. While it all looked easy and graceful, in reality a rugged battle was taking place. At the end, Dave boated a whopping five pound pickerel, a large trophy even for conventional tackle.

I was sold on ultralight to the point that I bought two outfits just like Dave's. It is an investment I've never regretted.

The lure we used that day, and one I have used successfully quite often afterwards, was the Meatgetter, a small fly and spinner combination designed by Dave. He has caught thousands of fish on it—22 different species in all.

On that first trip at Gaston, and during subsequent excursions with Dave, both in Virginia and North Carolina, he has taught me much about ultralight. One of the most important things is to make certain that an ultralight outfit is a matched set.

"It must have perfect balance. The rod, reel, line and lure must perform as a team and each part must complement the other." Dave explains.

My rods are about 5½ feet in length. Dave is experimenting with a longer rod and is finding that it works better under many situations. Regardless, the rod should have carboloy guides and tip. Soft metal guides will groove with use and this will cut the sensitive line that is used.

A variety of ultralight reels are now available: most are smaller versions of popular standard reels. "I prefer the ball-bearing type," says Dave. "They cost a little more but their performance and durability will more than justify the difference in cost. I find the friction-type drags will freeze from heat generated on long, hard runs."

It is important that you use premium grade line. Bargain lines aren't much of a bargain since they break easily, are difficult to cast and usually are larger in diameter than the best lines. Dave uses four pound test for all-round fishing, and so do I. But some fishermen like to go even lighter than that, especially when angling for trout.

Lures with small, sharp hooks are best, since lightweight

Casting for bass around old pilings on a rainy day with ultralight.

line won't allow a great deal of pressure during the strike. Tackle makers are marketing more and more ultralight lures annually.

Watching Dave play his five-pound pickerel, I learned that he has a special method for landing the big ones on ultralight equipment. Upon boating the fish, he stuck a chew of tobacco into his mouth and explained.

"The first signal of a big fish strike is the sudden jolt, a lot like getting hung up on a stump. Then comes a very slow, deliberate movement toward deep water."

Once a big fish is hooked, Dave offers no resistance. He opens the bail on his reel and allows the lunker to swim unchallenged to open, deep water, following it with the boat until it stops. Next he makes sure the water is clear of anything that might snag the fish. The outboard is tilted up, the anchor pulled in, the fish stringer taken out of the water.

Then he reels in the slack line and the battle is on. "I let the monster have his runs," says Dave. "You will notice each run becomes shorter and the fish tries to rest. Don't let him

Dave Goforth, the man who introduced the author to ultralight, unhooks a fat largemouth bass.

rest. Give the rod a few short jerks to keep him moving and fighting. Take up line in a pumping action.

"When the fish has been pumped to the surface and begins to roll on its side, I like to spin it in a circular motion using pressure from my rod. This makes the fish dizzy and landing it becomes very easy."

As can be seen, ultralight will handle the big fish, and at the same time, put more sport into the action. It will catch fish when other tackle fails. And it will make fighters out of fish that average well under a pound. With this in mind, no angler's tackle is complete without an ultralight outfit. If you are like me, you will find yourself using it more than any other gear.

The White Squirrels of Chickahominy Park

By DR. J. T. BALDWIN, JR.
College of William and Mary

Photos by Robert W. Vermillion and Nancy L. Pitzer.

THERE are white (*not* albino) squirrels in a population of gray ones at Chickahominy Park Campground in James City County, Virginia, where Route 5 crosses the Chickahominy River. In an *estimated* population of one hundred perhaps twenty individuals are white. How did this come about?

To answer the question we must first lay a basis for considering the manner in which genes operate in populations.

A gene is a unit of heredity. It may undergo change: indeed, for us to know that a gene exists and behaves as a unit, it must change—must mutate. A given gene has its own natural rate of mutation under a given set of conditions; some of the forces involved may be known, others not. For example: mutation rate increases with increased dosage of X-rays. A gene, then, exists in one or more alternate states which are called alleles.

In sizable populations of plants and animals, where mating is at random, *selection* fixes or loses a given allele. Alleles that are kept reach an equilibrium in the population, and that equilibrium tends to be maintained from one generation to another. The situation in a small population is another matter. There mating is not at random. *Chance* determines whether an allele is kept or lost: a deleterious allele might persist, and its favorable alternate be eliminated. Consequently, in restricted populations relative frequencies of alleles fluctuate in predictable degree but not in predictable direction. *Genetic drift* operates.

And so genetic drift operates for the mutations in the squirrel population at Chickahominy Park. My estimates of members may be far from accurate, but that really does not matter: the important observations are that the population is small and its habitat restricted and that the mutants are increasing in number.

Dr. Vagn Flyger, chairman of the Department of Inland Research, University of Maryland, informs me that squirrel populations comparable to the one described here occur in some of the Washington, D. C., parks. In one park most of the individuals are reddish; in a nearby park most of the squirrels are normal grays; in another park close by, there are many cream-colored individuals. In Lafayette Square, across from the White House, Professor Flyger reports that the population of squirrels seems to be much like the one at Chickahominy Park. The editor of *Virginia Wildlife* has seen many blackish squirrels together with the usual grays in a fairly extensive, but delimited, woods near Quantico, Virginia. Other such cases are known, and, of course, there is the population of about eight hundred albino squirrels at Olney, Illinois; they are "Olney's proudest boast and the town trademark" and are protected by law. One judges this population did not become established by genetic drift but rather by human intervention.

Chickahominy Park consititutes an almost-perfect model for the expression of genetic drift. The aerial photograph supplied by the U. S. Department of Agriculture shows the Park to be a small woods bounded by Route 5, by the Chickahominy River and one of its extensions, and by a field. The Park is almost a small island of woods. Bald cypresses are along the water; oaks and hickories and a mixture of other trees make up the woods proper. Veteran hunters say that the place has long been a haven for squirrels.

In the mid-1950's, when the owners were converting the woods into a campground, they saw there a single white squirrel. Thereafter, unfortunately for our story, the owners permitted an occasional hunter to shoot normal gray squirrels there but insisted on protection for the variants. (I am told that in fact very few squirrels were killed.) Moreover, campers enjoy feeding the squirrels, especially the variants. Selective feeding and the occasional shooting of a gray squirrel doubtless accelerated the spread of the allele for white and impaired the value of the population as a natural experiment, but it serves well, nevertheless, to demonstrate how genetic drift works. We have asked that in the future guns be kept out of those woods.

As this U. S. Department of Agriculture aerial photograph shows, the woods at Chickahominy Park Campground are almost completely isolated from other squirrel habitat by water, highway, and cultivated land. The small gray squirrel population in this situation constitutes an almost-perfect model for the expression of genetic drift.

Not an albino, but a true white squirrel, a product of genetic drift.

Some of the variant squirrels there are cream-colored. Others are spotted. A gray squirrel might be genetically spotted but would not express this pattern; a white squirrel with alleles for spots would be expected to be spotted. Coat-color inheritance has been investigated extensively for many mammals; in all of them it has been found that a complex of genes interact to give a range of colors and patterns.

Doubtless, a whole series of coat-color variants of our gray squirrel is in many of the small populations to be found throughout the wide geographic range of this species. But many variants would be at a distinct disadvantage in an unprotected situation. If, for example, a white squirrel appeared in a wild and unprotected habitat, chances are rather good that this individual would become the trophy of a hunter or the victim of an avian predator. This accounts for the rather frequent occurrence of aberrant squirrels in parks, where protection is afforded and genetic drift operates, and for their relative absence from forests.

GAME STOCKING

Does Subsidizing Nature Pay?

By W. ALAN GUTHRIE
Biologist

GAME management, when compared with other sciences, is relatively young. Throughout its brief history numerous "tools of the trade" have been tried in efforts to maintain optimum wildlife populations. These tools include protection (game laws to regulate the harvest), establishment of refuges, a bounty system on predators and undesirable species, habitat improvement, and restocking, to name a few. Some tools have proven to be successful and economically feasible, while other tools have produced little or no favorable results and at the same time were quite costly. Many laymen today periodically cry, "Restock!" if populations are low. Is this wise? Is game stocking economically sound? Does restocking add more game to the hunter's bag? Questions such as these need to be answered for sportsmen's clubs, Boards of Supervisors, and others who really do not know what results stocking efforts produce. Then they will he in a position to act wisely and truly aid in game management. Let's look at game stocking as a management tool and see if it is wise.

For any given game species there exists good range, poor range, and everything in between. The good ranges continuously do well and poor ranges are non-productive year after year because of limitations that reduce their capacities to support wildlife. Quantity and quality of hreeding stock is usually *not* the limiting factor. In the final analysis, the carrying capacity principle limits or prohibits wildlife increase in any given area. Would a farmer in the beef cattle business who has maintained one head per two acres on average pasture for years suddenly decide to double his herd on the same acreage? Certainly not, because he realizes that his land will support only so many cattle and the "law of diminishing returns" prohibits him from changing. Conceivably, he could add so many cattle that the return (or loss!) per animal would force him to abandon his farming enterprise and seek gainful employment elsewhere. This same principle applies to wildlife management. The land can produce (and maintain) only what it is capable of producing. Perhaps, then, stocking is not the answer. Suppose we review some examples of restocking and see what the results were.

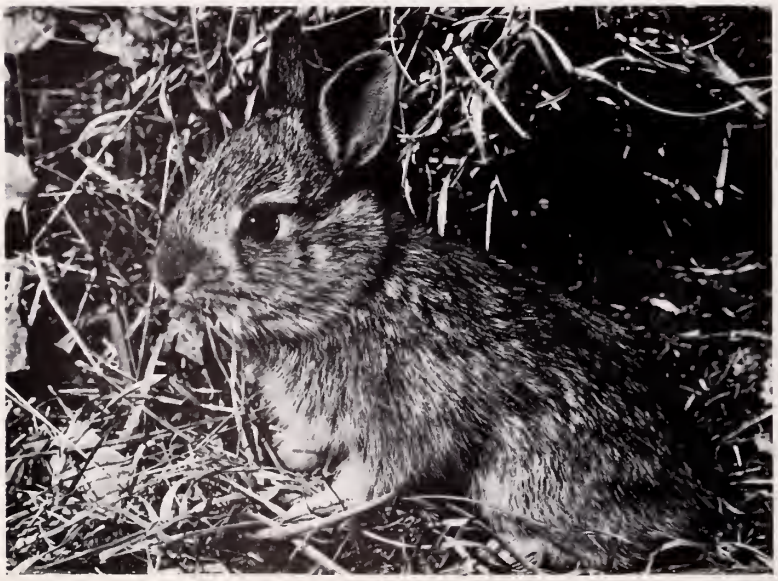
In New Hampshire in 1938, a known population of 15 wild pheasants existed on an 800-acre state game refuge. Ninety-four pen-reared, marked birds were released on the area. Only 31 of the introduced birds were ever seen again following their release. Apparently competition for available habitat drove them from the area. Within three months, the population had been adjusted to the pre-stocking level.

A study in Virginia several years ago involved deliberately shooting all wild quail from two areas and replacing them with banded game farm birds. Of a total of 73 released quail, only one band was recovered. It was evident that few stocked birds survived, but the shot-out areas were repopulated to previous levels by birds from the outside. This study indicated that it is not necessary to stock quail if birds are present or on adjoining areas. In the study report, the following statement was made: "One of Virginia's neighboring states recently released 13,500 banded quail and offered to pay $1.00 for each band turned in; only 152 were recovered."

Indiana, in 1942, assisted 48 cooperating conservation clubs in an experiment to determine the effectiveness of their pheasant release work. Approximately 4,000 cock birds were banded and released. The project was given good publicity in an effort to get a maximum of returns. Recoveries from six districts ranged from 0.6 percent to 9.7 percent. The statewide average was 6.4 cocks shot for every 100 released. For this 6.4 percent recovery, Indiana's Department of Conservation calculated that each bagged male pheasant cost $20.

Oklahoma's State Game Department determined that each bagged quail cost $5.25, based on rearing and releasing costs and on percentage of released birds that were recovered. (And these were prices of several years ago!)

Ohio tried rearing cottontails on a 270-acre tract surrounded with a "vermin-proof" fence. They stocked 9,000 imported cottontails. Practically the entire population, stocked and natives, died off, and it was almost impossible to find a rabbit on the area the next winter. The habitat was improved (food and cover plantings were made to provide good range), and it became productive of rabbits without any stocking.



Rabbits do not need help in stocking their range. They are experts at it.

L. L. Rue III photo

L. L. Rue III photo

Stocking suitable range with wild trapped deer and turkeys has reestablished these game species in areas where original breeding stock had been lost. Additional stocking where populations are established is unnecessary.

Joe Dell, a well known rabbit researcher, concluded in New York State that "It is not feasible for the State to carry on a program of cottontail importation and also that it is very expensive for local clubs to do so in view of the low rate of return."

Similar cases of documented evidence can be cited from practically every state. Restocking, in general, approaches being a complete failure in most cases and is very, very costly. Thus, some questions we posed earlier have been at least partially answered. Restocking usually is ineffective. Restocking is not often economically feasible. Restocking does little to add game to the hunter's bag.

To say, "Never restock!" would be foolish. Isolated cases of success do exist. The most significant to come to mind is Virginia's recent turkey restocking program. Turkeys, for numerous reasons, were gone from vast areas of Virginia. Wild birds (and I emphasize that they were wild stock and not pen-reared turkeys) were live-trapped and immediately released in areas where suitable habitat but no breeding stock existed. With adequate protection and cooperation from sportsmen, these birds have had a phenomenal increase, and today flocks of wild turkeys are plentiful and provide an abundance of exciting recreation for hunters and other nature lovers where there had been no turkeys for perhaps 50 years.

Survival of pen-raised bobwhite quail released in the wild is always poor, often near zero. The key to abundance is not stocking, but habitat improvement.

L. L. Rue III photo

Likewise, Virginia's program to reintroduce deer has been successful, and today we have excellent deer hunting throughout Virginia. But this program did not involve the release of additional deer where even a remnant of an established population existed.

Restocking can be wise, economically feasible, and successful in such unique cases. Restocking an extirpated species, one which has been completely wiped out or eradicated, is often the only way to return that species to a given area. But this usually involves an entire section of a state, or at least an entire county, and not merely a farm or a few square miles. Stocking rabbits, quail, and other small game species in Virginia is not recommended. Improvement of the habitat is the answer. Farmers can leave strips along the fence rows, make brush piles, provide small food patches, "sloppily" harvest grain crops, control hunting, and so forth, and wildlife will likely increase. If it does not, artificially stocked individuals will fare no better than those already there. Most game species rapidly reproduce (rabbits should be insulted when people begin restocking because they are "A" students when it come to knowing the multiplication tables!) and will move into areas where suitable habitat exists. We do not have to subsidize Nature when it comes to adding numbers to any established game population!

An Angler Keeps His Word

By OZZIE WORLEY
Roanoke

An incident that took place along a Virginia stream last year proved that trout fishermen are not the selfish lot they're sometimes painted to be.

The scene: Smith River below the Philpott Reservoir dam not far from the Henry County community of Bassett.

Principal characters in the little drama: Don Henninger, from Roanoke, and five-year-old Ricky Keaton.

Ricky lives near the river and is a friendly little boy who loves to fish. The last time Henninger had fished that section of the stream he had met Ricky.

Henninger, while chatting with the lad, found out that his dad had been killed in an accident several years ago. Henninger also learned that the boy was down on his luck, because he lacked a workable rod and reel.

Before Henninger left the river on that late spring day, he promised Ricky that next time he returned to fish he would have a rod and reel for him.

A few weeks later, the Roanoker eased his car into a wide place in the dirt road near where he had met up with the boy.

From where he was playing in his yard, Ricky recognized the car, as if he'd been expecting it for a long while. He ran up to it and exchanged shy greetings with Henninger.

Henninger walked to the rear of the car and opened the luggage compartment. He reached in and fished out a push-button reel and rod. Ricky's eyes widened.

"Here, this is yours," Henninger said.

The boy hesitated for only a moment, then grabbed for the rod and reel. He ran toward the river. "Hey, look what I got," he yelled, holding the rod high for his playmates to see.

Ricky didn't stop running until he reached the river bank. Barefooted, he waded into the water and splashed toward a boulder in midstream. Some other youngsters were using the big rock as a fishing base. Ricky joined them.

The Smith had just been restocked with trout and the lad was in business again.

Above: Ricky Keaton can hardly believe that the rod and reel offered by Don Henninger are to be his very own. Below: Ricky (arrow) loses little time in giving his new possession a trial in the Smith, which flows near his home.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

165,797 FURS TAKEN IN VIRGINIA LAST SEASON. Virginia trappers sold 165,797 pelts during the 1967-68 fiscal year, according to reports supplied to the Game Commission by fur buyers. Muskrat hides, although down considerably from last year, were still the most numerous item totaling 120,471 pelts. The fur catch also included 19,160 raccoon pelts, 10,048 deer hides, 7,247 opossum skins, 2,948 beaver pelts, 2,437 mink and 2,092 skunk pelts. Red and gray fox skins totaled 2,682 and 559 otter pelts were taken during the year. Only 4 nutria skins were reported.

The total fur harvest was again down from the 270,766 reported last year. Much of the decrease was in the number of muskrat pelts which are often bringing less than one dollar each on the market. Most other fur species were below the 1966-67 harvest level also.

2,539 DEER KILLED BY ACCIDENT. A total of 2,539 deer died in Virginia during 1968 from causes other than legal hunting. Of these, 1,627 were dispatched by automobiles, always the leading killer. Illegal hunting activities accounted for at least 738 and dogs were known to have killed 73. Fences took a toll of 66 deer who became entangled and couldn't escape. Collisions with trains and other miscellaneous mishaps accounted for the remainder.

This represented about a 30% increase over the number of accidental deer deaths reported in 1967. Miscellaneous deaths equalled 20% or more of the legal kill in some areas and nearly 10% on a statewide basis.

WOODCOCK STUDY TO BEGIN IN VIRGINIA. Game biologists will be eavesdropping on woodcock beginning in April as part of an attempt to learn more about the abundance of this secretive bird. The census technique involves driving over 80 separate 3.6 mile routes, making 2 minute stops each .4 mile and listening for calling woodcocks.

The male woodcock makes a sound called a "peent," followed by an aerial display and "flight songs," as part of its courtship procedure. The birds go through this courtship ritual early in the morning and late in the evening. The counts will be made during the evening period for convenience and uniformity.

According to the 1965-66 survey of Virginia hunters, there were 9,153 who pursued the woodcock, bagging 42,136 of them. This would make it the fifth most important game bird in the state. The extent of woodcock range and migration patterns of the birds are not well known in Virginia. The study is being conducted on a standardized basis in all states where woodcock occur, under the supervision of the U. S. Bureau of Sport Fisheries and Wildlife Migratory Bird Population Stations.

COMMISSION ADOPTS LONGER GOBBLER SEASON. The Commission of Game and Inland Fisheries adopted an April 19-May 10 spring gobbler season at their meeting in Richmond, March 7, giving hunters an extra Saturday. Hunting will be prohibited in Buchanan, Dickenson, Lee, Russell, Scott and Wise counties and on the Clinch Mountain and Hidden Valley wildlife management areas where turkey populations are being restored by the release of wild trapped birds.

Private lands in Buckingham, Caroline, Goochland, Highland, King and Queen, King William, Louisa, Prince Edward and Spotsylvania counties will be closed but hunting will be permitted on National Forests, Commission owned lands and military areas located within these counties. The private land closure was at the request of local boards of supervisors.

Hunting regulations are similar to those in effect last spring except that hunters will be allowed in the woods from one-half hour before sunrise until 11 a.m. each day. Only bearded turkeys are legal game. Dogs, electronic calls and organized drives are prohibited.

Six Records Fall in '68

By HARRY L. GILLAM
Information Officer

RECORDS were broken on six species of freshwater fish during 1968, entries in the Game Commission's Freshwater Citation Program reveal. The total of 645 entries was quite similar to last year's total. There was a marked increase in the number of channel cat, which soared from 65 in 1967 to 108 last year. Rockfish, smallmouth, musky and carp entries were also up.

A 38 pound 8 ounce carp caught by Frances Holmes in Occupacia Creek bumped the 36 pound bowfishing trophy which had held top spot since 1965. Austin Sullivan's 12 pound 12 ounce largemouth from a Spotsylvania farm pond tied the existing record catch from Gaston. The 20 pound 8 ounce muskie taken by Ernest Wagoner in March while crappie fishing in Smith Mountain Lake stayed well ahead of subsequent catches. A 7 pound 4 ounce pickerel taken from Buggs Island by Larry Kindley early in the year sneaked ahead of the previous 7 pound record for this species.

A 29 pound 12 ounce striper from Gaston set a new record in this class, where records have been broken nearly every year. The 4 pound 3 ounce sunfish, just shy of a world record, taken from a private pond near Charlottesville by Frederick Gignoux, set a mark that won't soon be broken. After very little activity over the past several years, the white bass division came to life and saw the record broken twice in 1968, the largest, a 3 pound 2 ounce specimen taken by Joe Ashworth from Claytor Lake.

Mrs. Earl Adkins of Dublin gets a welcome assist from her son Jack in holding her 28 pound 8 ounce Claytor Lake flathead cat.

This 20 pound 8 ounce muskellunge taken from Smith Mountain Lake by Ernest Wagoner of Martinsville has not yet been topped. He caught the big fish on a crappie rig.

Martinsville Bulletin

Larry Kindley's 7 pound 4 ounce Buggs Island pickerel has survived as a state record for a full year. Pickerel fishermen took about half as many citation pike in 1968 as they did the previous year.

SUMMARY OF 1968 CO

Fish	No. Entries 1967	No. Entries 1968	Old Record lb.	Old Record oz.		B lb.	B oz.
Brook Trout	0	3	3	2	Quantico	2	4
Brown Trout	9	10	11	0	Philpott	5	11
Rainbow Trout	8	3	9	14	Priv. Pd.	5	0
Lake Trout	0	0	5	6	Philpott		
Carp	19	27	36	0	Fairfax C.	38	8
Channel Cat	65	108	26	8	L. Brittle	22	1
Crappie	13	12	4	13½	L. Conner	3	8
Flath. Cat	3	3	45	0	Claytor L.	28	8
Gar	6	15	18	½	Chick. L.	14	15½
Grindle	16	19	17	8	" "	15	12
Kentucky B.	0	0	1	12	Claytor L.		
Largemouth B.	115	106	12	12	Gaston L.	12	12
Musky	3	12	10	5	Smith Mt. L.	20	8
Pickerel	159	76	7	0	Lake Smith Western Branch	7	4
Rock Bass	1	7	2	2	Pigg River	1	10
Smallmouth B.	64	72	8	0	Claytor L.	7	2
Striped Bass	75	92	28	12	Buggs Isl.	29	12
Sunfish	90	75	2	10	Nottoway	4	3
Walleye	7	2	17	0	New River	8	6
White Bass	6	3	2	5½	Claytor L.	3	2
Totals	659	645					

This gar, weighing nearly 15 pounds, was a surprise catch for angler Hal D. Ragland of Richmond. The party was fishing for bass on the Mattaponi River when this archaic denizen of the deep latched onto a plastic worm. A total of five gar hit the group's artificial lures that day.

This record tying 12 pound 12 ounce largemouth was taken by Austin L. Sullivan of Fredericksburg from a local farm pond. Its twin came from Gaston Reservoir.

This 5 pound 11 ounce brown trout from Carvins Cove was taken by Alvin B. Ring, Jr., of Roanoke.

harles Skinner of Virginia Beach holds ne 3 pound 8 ounce crappie he caught om a private pond in Southampton County near Franklin.

The best of 7 entries in the rock bass division, this 1 pound 10 ouncer from the Pigg River was caught by Dalton Burgess of Roanoke.

Photo by Robert Harris

Walter Echols of South Hill wears a justifiably proud grin as he holds his 29 pound 12 ounce striper from Gaston, the largest landlocked striper taken to date from Virginia waters.

Jane, age 5, daughter of Harold Sawyers of Elk Creek, holds daddy's big brookie, which weighed in at 2 pounds 4 ounces.

A 2 pound 4 ounce brook trout from Passage Creek makes quite a handful for Chris Sams of Oxon Hill, Maryland. He took the big brook on spinning tackle in mid-June.

NTEST ENTRIES

est 68 Catch	Angler
Ell Co., Passage Cr.	H. Sawyers & C. Sams
Ca ins Cove	Alvin B. Ring, Jr.
W & Sells Lake	G. Sellers, Sr., & H. W. Hale
Oc pacia Cr.	Frances Holmes
Cl kahominy Lake	Walt Elliott
Pr Pond	Charles Skinner
Cl tor L.	Mrs. Earl Adkins
M aponi	Hal D. Ragland
Cl kahominy L.	Dave Arthur
Pr te Pond	Austin L. Sullivan
Sn h Mt. Lake	Ernest A. Wagoner
Bu s Island	Larry E. Kindley
Bi River	Dalton L. Burgess
N River	Milton Hamby
G on	Walter W. Echols, Jr.
Pr te Pond	Frederick Gignoux
D River	Carroll W. Mayhew
Cl tor Lake	Joe L. Ashworth

Richmonder Walter Elliott holds the 22 pound 1 ounce channel cat he caught in Chickahominy Lake. Although not a record, it is quite a handful of catfish.

Some anglers seek citation size fish in vain, while others sometimes take them without half trying. S. B. McEachin, Sr., of Richmond, was startled to find this 8 pound, 5 ounce largemouth trying to make off with his light tackle as he fished for bream in a Powhatan County pond.

Frederick Gignoux's behemoth bluegill, which tipped the scales at 4 pounds 3 ounces, came near the world record mark. The big fish came from his private pond near Charlottesville.

This 7 pound 2 ounce smallmouth taken from the New River by Milton Hamby of Galax approached the 8 pound state record from the same area.

OUR NEW NEIGHBORS THE SCREECH OWLS

By JOYCE FITCHETT RUSSELL
Kilmarnock

LATE one afternoon in the middle of February, the birds in the front yard set up such a clamor that I pulled on a sweater and went outside to determine the cause. All the activity was directed toward the flicker house: Could that be a yellow kitten peeking out? I got the field glasses and recognized my first owl. Thumbing hastily through my bird identification book, I soon found the likeness of the little screech owl, in it rufous phase.

Only ten inches long, this bird is shorter than the mockingbird, but his stubby tail, stocky body, large head and broad wingspan set him apart from our familiar songbirds. Occurring in two color phases, red or grey, regardless of sex, these owls will nest in flicker boxes. Hope flared that we may have a new neighbor. Elation, however, gave way to concern when I read on that flying squirrels are one item in the diet of this species of the owl family. We had fed peanut butter to the *Glaucomys volans* nightly for several years and were fiercely protective, even to considering shooting the little owl. Reason soon conquered fear, and we decided to let Nature have her way.

Apparently the noisy birds discouraged our new guest, for after a week's visit, he no longer tried to sleep in the box. Now we were disappointed that he came no more and our curiosity heightened our interest.

Therefore, when I heard the familiar complaining chorus early the following December, I rushed eagerly to see the same little red owl. A knowledgeable friend conjectured we had a female, already searching for a nesting site. We had become tolerant and now grew sympathetic as the assemblage of jays, chickadees, titmice, cardinals and the mockingbird loudly deplored her presence in the birdhouse. If she sat at the doorway dozing, she would be divebombed. Even if she was safely asleep far down in the bottom, a titmouse might flutter at the opening to verify her occupancy there and to initiate the gathering of the clan. As time passed, other birds joined the regulars: the flicker, brown thrasher, robins, and once a black-and-white warbler and house wren. Most often, as she perched there, she seemed unperturbed; occasionally she would vanish within.

By an odd coincidence, on the anniversary of her initial visit in mid-February, a little grey owl appeared in another box not far from hers. The fact that he subsequently roosted in several different places confirmed our suspicion that his mate had decided on her nesting site and he had agreed.

Discarding the binoculars one afternoon, I circled the house and came up behind the tree where the little grey owl leaned out of his house. I emerged about four feet beneath him and smiled at his remarkable resemblance to a sleeping cat. Even his "whiskers" twitched. Suddenly his round yellow eyes blinked open and focused on me. He leaned farther out. Fear flattened his ear tufts and his fluffy feathers smoothed until he looked like a tiny kitten. Thump! He dropped back into his box.

He had looked at once so ominous and then abruptly so small and defenseless that all my reservations about his residence were forever eradicated.

For two weeks the little grey owl roosted in any of three bird boxes; then one day he peeked from the home of his mate. This togetherness convinced us we would have a family before spring was over.

L. L. Rue III photo

In the early April dusk I saw the grey owl swooping along the hedgerow in search of mice.

Rarely now did either owl reveal his presence. Not until one early April dusk did I see the grey owl swooping low along our hedgerow searching for mice, with the red owl watching from her box. A week later as I put out peanut butter after dark for the flying squirrels, an owl dropped to a limb just above my head. I held my breath as a little squirrel glided in, but his quick darting about the trunk (or my presence) discouraged the owl, who flew away.

Throughout the summer the squirrels displayed no fear, but continued to cavort noisily as they fed. In fact, we counted as many as five at once, more than ever before. Some biologists believe predators do not feed in their immediate nesting area. There would be two powerful reasons for this selective feeding: first, protection of the young from discovery as a result of cries from a captive, and, second, maintenance of a constant natural balance in the chosen nesting site.

Only twice did suspicious incidents occur: once when a baby titmouse just off the nest disappeared overnight, and the other when the male owl flew into a box inhabited by a starling. She escaped squawking and he remained inside, whether merely resting or devouring her young, I never knew.

Not until the middle of May, nearly two-and-half months after the owls had first appeared together, was there an indication the young were growing up. The mother regularly roosted on a limb above the box, to the consternation of the usual scolding birds.

One night our son witnessed a near disaster. He saw our cat climb twenty feet up a holly and fall to the earth with the grey owl. The jolt released the bird, who promptly flew

to his waiting mate and fed her.

Finally one mid-June morning, a downy white baby perched at the door of the house, swaying and dozing in the sunlight. His detractors claimed his attention and he appeared to study each bird in its turn.

Several days later the mother owl dived at our son as he walked in the yard, and we deduced from that the babies had flown from the nest. From the safety of the screened porch we surveyed the area, wondering where the babies might be. Casually I glanced down into the camellia bush bordering the porch and saw, not eighteen inches from my knee, a white-speckled-with-grey powder puff, the baby owl.

While my son hastened to get his camera, the little fellow made a short flight and landed in the yard, providing a good snapshot background. Much to our surprise, a Kodachrome slide revealed him to be yellowish. Evidently his mature plumage was to be an inheritance from his mother.

To insure the baby's safety our son placed him in a nearby sapling where he clung until nightfall. The next day I found him in a holly, about twenty-five feet distant. High up in an oak tree the mother nervously watched, snapping her bill and uttering a whirring warning.

Until the third day I assumed there was only one baby, although bird books ascribe three to five eggs in an average clutch. Strolling in the early dusk, I heard the cat suspiciously come down a neighbor's tree and went to investigate. There on different limbs sat two babies. Again from far up the tree the mother swooped down along the ground and over the hill as she began her nocturnal search for food. For the first time, I heard the "chirrr" baby food call that I had always attributed to cicadas. Her eerie answering call as she returned with whatever mice, frogs, moths, snails or earthworms she had found brought momentary quiet to the darkness.

For the last time I found the two babies in a dogwood the fourth day and noted that one had tiny yellow feathers around his eyes. Oddly enough, the songbirds no longer seemed to object to the baby owls, although they usually chided the nearby mother.

As the summer progressed, I distinguished babies calling from five different areas, but whether all these voices belonged to the same family, I had no way of knowing.

Her eerie call as she returned with whatever food she had caught brought momentary quiet to the darkness.

Photo by Rue

Baby screech owl, photographed on the lawn. The color slide showed him to be yellowish, probably an inheritance from his red phase mother.

Verifying the information in my books that owls feed their young a long time was the fact that well into November the calls were still audible, although neither so loud nor so insistent.

And remembering the unwanted guest, the chickadees and titmice on occasion still flit about the flicker box, haranguing the departed family. Sometimes, if the din begins in late afternoon, a puzzled flicker, roosting in his old house, rises to see what the trouble is.

IN APRIL RAIN

By REBECCA APPLEWHITE WINFIELD
Stony Creek

This very special little girl,
One day walked home from school;
It was a rainy April day,
And 'twas against the rule.

She took an unfrequented path,
And she was all alone;
Bad wolf might have gobbled her,
And I'd have never known.

She saw some lovely violets,
She touched their drenching glow;
She gazed upon a babbling brook,
And stopped to see it flow.

With love and beauty in her eyes,
She danced and skipped to me;
She'd brought the lovely violets back
In heart and eyes; you see?

To me 'tis quite a wondrous thing,
And yet 'tis very plain;
God takes care of little girls,
Who walk in April rain.

Nature's Engineer Is Back on the Job

By MICHAEL J. WALKER
Washington, D. C.

ORIGINALLY, beaver were found in the New World from south of the tundra to the Gulf of Mexico, wherever rainfall was adequate to provide marshes, streams, and ponds. But the animal became a lucrative economic entity in the age of the fur trade.

At first small numbers of pelts of the animal were traded between French trappers and friendly Indians, who also harvested it for food. Then trappers and others joined in massive hunts as the price of beaver pelts in Europe soared.

By the 19th century beaver was one of Hudson Bay Company's best money makers. For example, between 1853 and 1877 more than three million pelts were sold by the firm.

Subjected to continuous exploitation over many decades, the animal began to disappear from entire river systems. Population reached its lowest level by the beginning of the 20th century, so many state legislatures passed laws prohibiting beaver trapping.

Where the animal still resided and was protected, resurgence came, as it multiplied and spread. Areas denuded were also supplied new beavers through state game department transplanting programs. Eventually beaver numbers grew as the young mated and sought new homesites, moving upstream, downstream, and overland. As a result, in many of the habitats where the animal had been greatly decimated or eliminated, the beaver thrives and is again abundant.

Once exterminated over much of his range, the industrious dam builder is back on the job and most of us are glad to have him.

Leonard Rue photo

The campaign to bring back beaver was not an easy one. In Maine, for example, protective efforts date back to 1866, but poaching continued until 1928 when the state organized an effective law enforcement procedure under the direction of the Commissioner of the Department of Inland Fisheries and Game. With firm enforcement, the animal thrived and today Maine's beaver population is nearly at the level it was before the white man came to the New World.

So people eventually came around to respect the animal. It seems that man the builder found love for one of nature's creatures with engineering feats that rival his own.

For example, Tiffany wildlife area in Wisconsin—an area of many desirable ponds, channels, and marshes—was once a dried out eroded wasteland. People had tried to reclaim the area by damming the Chippewa River nearby, but their dams always collapsed and so they gave up. Give the job to beavers, recommended George Knudson, biologist from Madison.

So game officials declared a closed season on trapping beaver in the area and introduced several of the animals. The beavers dammed several feeding brooks and caused the runaway waters to spill out into the wasteland. The result was a remarkable change in habitat for wildlife as marshes and ponds were created.

In Canada local officials gave a Saskatchewan farmer permission to dam a stream to store water for dry periods. He merely dumped two wagonloads of poplar along the bank and waited. In a short time he had a dam as beavers went to work, with the result that the flowage created assured a plentiful supply of water not only for him but for his neighbors as well.

Keys to such remarkable engineering feats are the animal's teeth and feet and its ability to thrive in water. It has sharp gnawing front teeth, enabling it to cut down trees even more than a foot thick. Legs are short and strong, front paws clawed for digging and hind legs webbed for swimming.

Trailing behind it is a flat 10- to 12-inch tail, which serves as a prop when the animal stands while gnawing.

Its dark brown, smooth dense fur traps air and insulates the animal's skin from contact with the water or cold air. Thus, the beaver is at home in water both in cold as well as more temperate regions. It is a superb swimmer both below and on the surface, getting its oxygen when streams are iced over from pockets of air trapped below the ice.

Sluggish small streams are preferred by beaver for lodges and dams. Lodges may measure 30 feet across at the base and more than 15 feet high, while dams can span streams more than 30 feet across. They usually begin as a pile of tree limbs left around a burrow or feeding place after the bark has been eaten. Converting such a pile into a lodge requires much energy and effort, hence the phrase "eager beaver."

It takes a beaver anywhere from several days to several weeks to build a lodge or dam. In West Virginia I saw a pair off and on for over a week, continuously at work damming a small stream. Afterward they patched and added to the height of the structure.

Limbs, grass, mud, and rocks are piled by beaver, who also leave an underwater passageway into the interior. The hollow interior may be as much as eight feet across and provides a snug warm place for the animal in winter as well as a haven from would-be predators.

Beaver also dig burrows and canals through which they travel back and forth with food and construction materials. Thus, like man, it makes its own roadways to the homesite.

Colonies comprise definite family groups consisting of an adult male, a female to which he is mated for life, the young of the previous year, and the young of the current year. Nearby are two-year-olds seeking mates and building other homesites. Breeding usually takes place in February, and birth is accomplished three months later in late spring. From two to seven young kits are born, which may live as long as 20 years in the wild. A night forager primarily, beaver are also known to venture forth in the daytime.

A variety of plant life serves as food in summer, but in winter when vegetation is sparse, beaver feed on the bark of alder, willow, aspen, and poplar branches stored in and around the homesite. On such a diet, the animal is able to grow to a length of about four feet and a weight of between 30 and 70 pounds.

Travels are usually restricted to the immediate neighborhood of the homesite, but the animal has been known to roam overland almost a mile to cut down certain trees. Usually worthless trees, both hard and soft, are taken as buttressing materials. Canals the animal digs serve as excellent passageways for getting material to the lodge, but the animals are strong enough to drag rather fair-sized logs overland.

With the many flowages throughout their system of dams, lodges, and canals, excellent nesting and resting areas are created for ducks and other waterfowl. In an age of many powerboats on streams and lakes which constantly disturb the birds, it is a bonanza for them to find a secluded quiet pool with only beavers and other wildlife as neighbors.

Also benefiting from beaver flowages are muskrats. Besides providing considerable food at the flowage, the constant water-level maintained by the beavers' construction prevents muskrats from being flooded out, or frozen in as a result of a sudden drop in water level during winter. Incidentally, muskrats get along very well with beavers and even share homesites with them.

Many of the preferred foods of wandering raccoon and mink are also found in abundance at the flowages. Other frequent visitors include ruffed grouse, weasels, and great horned owls. Whitetail deer, black bear, and woodcock are also attracted. Populations of healthy trout are maintained by the food and deep clean water at some flowages.

When rain is very plentiful, beaver dams and lodges drive excess water onto the land, replenishing ground water supplies. It is true that some trees that are flooded die as a result, but many others receive bountiful supplies of ground water to nourish thirsty roots. This also prevents rapid runoff and erosion of soil.

No creature is without faults, and the beaver does have a few. Culverts are sometimes dammed and farmland and roadways flooded, and too many trees are cut down where the animal overpopulates.

The animal's pelt is still worth something on the market, and roast beaver is also a rewarding meal. At a recent Christmas party of the U.S. Bureau of Sport Fisheries and Wildlife, I found roast beaver to be tastier than roast venison and baked salmon that was also served.

One won't have much success with offenders merely by blowing up the lodge or unplugging a culvert. The beaver is a persistent home builder and will restore his works in a short time.

Nature's engineer is back on the job, and thank goodness he is. His works are far more beneficial than harmful to man and wildlife, and we, as the principal destroyer of this animal, have finally come to realize this.

Let's Cook Flounder

By MARJORIE LATHAM MASSELIN
Richmond

WITH the family fisherman still away at boarding school, we have to rely on Max Ailor's column and the local fish market to keep us abreast of what is "running." It is a sad state of affairs, let me tell you, and it looks as though things may get worse before they get better—as indeed what doesn't these days!

We are not referring specifically to politics, unless you may perhaps foresee in our problem the potential of another "Kitchen Debate." The fact is, the last letter from that boarding school we just mentioned announced our son's intention to remain in Switzerland when he completes his language studies there in order that he may commence apprentice chef training. So it begins to look as though "Mama" may be in for some competitive cooking! Naturally, we are delighted.

Meanwhile, let's talk about the flounder on which we two "tired old members of the Establishment" supped in splendor this evening. If in musical comedy "There is Nothing Like a Dame," in the kitchen "there is nothing like a flounder." Flounder is one of the more versatile of the fish. They are relatively firm fleshed and come in a wide variety of sizes. You can cook the little chaps whole as a single serving or you can filet the big fellows and having done that—or cajoled the nice man behind the counter to do it for you which is infinitely more sensible—you are free to run the gamut of your whims and fancies.

Remember, though, that the flounder is a delicately flavored fish and that over-saucing is equal to over-kill. It loses its delicate character, and that is always to be guarded against—scrupulously!

Tonight we had rolled filets, gently simmered in a white wine flavored stock, mildly seasoned with salt, peppercorns and a bayleaf. A little squeeze or two of fresh lemon can be added after the rolls are removed from the stock to cool on a rack. Half a pound of shelled and deveined shrimp are then added to the same stock and simmered, like the flounder, for three to five minutes until pretty pink and tender. Then these, like the flounder, are immersed in vinaigrette and set into the refrigerator for a pleasant chilling.

At serving time, place the flounder end up so that they appear to be "stuffed" with the shrimp that you spoon over the top and serve on a bed of crisp lettuce. At this time of year, we give up on fresh tomatoes and turn to the relatively new canned, sliced baby tomatoes for a colorful accom-

paniment.

The way we prepare them is in the German manner. We dress them with a bit of finely minced green onion and fresh chopped parsley. Then add a mixture of olive oil and a bit of tarragon vinegar—wine base, of course, toss them lightly, and let them marinate while the fish marinates. Cucumbers are also good in this manner. They should be sliced paper thin using a potato peeler, one of the handiest gadgets ever invented by civilized man, and you can leave the lovely dark green skin on, if you like, for added color.

To achieve the real old German Gurkensalat, the slices should first be wilted in salt to draw off the excess water, and then drained before adding the oil, vinegar and freshly ground black pepper. Fresh hot rolls straight from the oven and a nice bottle of our old standby Rhine, or if you like the sweeter, grapier Sauternes better, serve one of those. It's quite a pleasant little dinner on a warm evening, and I think some of you may not have tried flounder cold. Do. You'll love it.

In cooler weather, you might substitute a bed of fluffy rice for the lettuce and serve the flounder "rolls," reheated in a mild shrimp or crab creole. The procedure for the creole is standard. Start with olive oil to cover the bottom of the pan. One hates to repeat one's self, but a heavy iron or copper pan is always best. Saute roughly chopped onion and green pepper, cut into half-inch dice. When nicely cooked through so that all is tender add a cup of tomatoes, canned, and the seasonings. We like a small amount of gumbo filepowder and chile powder. But do use a light hand with them so you can taste the flounder!

Just a green salad is sufficient, and a "limp" lettuce such as Boston is best, although personal preference should be your chief guide in selecting the salad green to be used. A few crisp, tender spinach leaves are nice for contrasting color. The dressing is the same. Omit the bread since you have the rice, and at this time of year, remember you are thinking in terms of whether last year's swimsuit is still likely to fit!

Of course, there is nothing that says you can't bread and fry a flounder filet, but that always seems a tawdry way to serve up a fresh flounder. So why not saute small filets carefully in butter and then, after removing each one, whole, to a hot platter, add a handful of slivered almonds to brown in the butter in the pan. These you scatter over the filets and garnish with chopped fresh parsley and perhaps a lemon wedge or two. You may, also, if you wish, sprinkle the filets with a little white wine or lemon before the saute process, but drain it off before putting in the hot butter; otherwise, you will have steamed flounder, which doesn't add a thing.

Tender tiny frozen peas, thawed and barely heated in butter, are a nice foil, and you can add a few crisply fried potato "chips" or the hot rolls. The name of this little game is *Sole Almandine*. The sole, of course is an even more delicate member of the flounder family, but the locally caught flounder when absolutely fresh—as ALL FISH should be—is a remarkably acceptable substitute.

Still another classic preparation is *Sole Veronique*, which is basically the same preparation until you reach the point of no return on the almonds. These are replaced with a handful of skinned and seeded fresh green grapes. They may or may not be sauteed for a minute or two. We like to let them take on the character of the fish butter and spread them on the sizzling hot fish. Having fish at the hottest possible temperature for serving is always a must with fish of any kind. There is *nothing in this world less palatable than lukewarm fish.*

One pleasant and charming restaurant in McLean, Virginia, serves a Stuffed Whole Flounder, which is absolutely marvelous if you can put up with the bones. They cut a slit in the flounder and with an exceedingly sharp knife release the flesh of the top, white side from as much skeleton as practicable. This is then crammed chock full with a mildly flavored deviled crab, dusted with buttered dry bread crumbs and baked for about 15-20 minutes, depending on size, in a moderately hot oven. To brown the top, you may need to turn on the broiler for a few minutes at the last stage of the cooking. Watch it! Broiling heat burns rapidly—especially when the "package" is already hot all the way through from the previous baking. Serve blisteringly hot on individual plates, and add a cool salad such as the one already described. Spoonbread is also a specialty of this particular hostelry, and it hardly needs a recipe for the Virginia housewife. We include one anyway for non-Virginians, who may not know what they have been missing.

SPOON BREAD

I use a glazed earthenware casserole, and since my main pain in cooking is always the mountain of cooking dishes to wash up later, I always grease the casserole by melting the required butter in the casserole in a slow oven—three tablespoons of it. The recipe, itself, comes from a Colonial Tavern in Williamsburg: Two cups of plain old everyday Bolted meal (that's white corn meal) to which slowly add 2½ cups rapidly boiling water. Stir like the very devil to prevent burning, but be sure it is cooked. Then stir in: 2 beaten egg yolks; 1½ teaspoons salt (I use less); 1 tablespoon sugar; 2 tablespoons baking powder; 1¾ cups whole milk.

Beat vigorously and pour in the butter that was melted in the casserole, swishing it around first to coat the casserole well. Now, beat the two egg whites and FOLD in. Bake in the casserole at 375 degrees for about 30-40 minutes. You can tell when is rises prettily and "looks" done. Serve it straight from the casserole with a spoon and plenty of good fresh butter. For happiest results, it, too, should be very hot.

Again the petit pois are nice or the salad or perhaps you are ready for some of the fresh asparagus that is on the market now. Use just the tenderest tips—about an inch and a half or two inches. Cook in a small amount of lightly salted water until just tender-crisp and still green. Drain, bathe in butter and serve hot. Save the tough stems; they make a grand cream of asparagus soup. Cook tender and put through a food mill.

Dry white wine, of course, and to polish off just about any of these delicious dinners, the inevitable demitasse preceded by a lovely compote of fruit. Or, if you can't bear to cook the grand fresh fruits that are on the market now, try a dish of blueberries with a dollop of sour cream, or some of those huge sweet strawberries with a small hill of powdered sugar and a flag of fresh mint from your herb garden planted firmly on top. If you are still hungry, or think you may be, lay two or three of the special rolled vanilla flavored "pirouettes" that are put out by one of the finer food manufacturers. They are *almost* as good as Mother used to make and infinitely simpler to achieve.

Don't forget the strong, black demitasse that, taken black and unsugared, pacifies your guilty conscience for having dined so sumptuously! Its bitterness, if made in an expresso pot, is the end-all and the be-all of the long and pleasant sit-in required for the full enjoyment of the conversation that invariably forms the foil for your excellent cuisine.

Skylarkers of the Night

By KATHERINE W. MOSELEY
Rixeyville

WE spend many hours in the daytime and at night on our knoll above the Hazel River near Culpeper, Virginia. Never in any season had we reason to suspect that merry skylarkers were seampering, gliding and parachuting through the air in intricate patterns after it was dark.

Last spring in an electrieal storm the oldest and largest hemlock tree close by the house was slashed by lightning. We realized the tree was doomed. Age and disease had hollowed the trunk; now the lightning bolt opened cracks from one side to the other. As the weeks passed we watched one lacy bough after the other wither and die. My husband, with perhaps more sentiment than wisdom. determined to lay the stricken old tree to rest by himself, which he did with skill and safety. The venerable giant fell as majestically as it had lived.

After the tree struck the ground there was a sudden seuffling and from the hollowed trunk scampered two startled, soft, gray-bellied squirrels. They ran up a nearby poplar tree to attain height and then took off to swoop and glide like birds across a wide. open field. There they veered to the right and sailed toward an old oak tree. We knew, of course. they must be flying squirrels. The big-eyed, gentle, quiet little creatures with silky fur are so strictly nocturnal they are seldom seen in the daylight except for an emergency. The felling of their home was certainly an emergency.

We should have guessed flying squirrels were on the place sinee there are so many eastern gray squirrls. We felt sure the small evacuees would have no problem finding another den since the area is heavily wooded with many hollows on limbs of dead trees as well as numbers of abandoned pileated woodpeckers nests and feeding holes. We also guessed that these flying squirrels had many others of the species, *Glaucomys volans*, as neighbors since they tend to live in soeiable groups. They are said to be very quiet, friendly and cooperative, even to sharing a community warehouse.

Soon after the hemlock was removed it was time to make ready the bluebird houses. As my husband reached for one mounted box he looked directly into the big. black eyes of a flying squirrel just behind the very small opening. Anxious not to disturb another family he retreated with haste. It was by then late March and we knew the young, from one to six, were born. The hole of the bluebird house seemed too small for either of the squirrels that left the hemlock. However, we later found the opening had been gnawed, so perhaps the squirrels enlarged the opening.

In April we often passed the birdhouse to listen and could hear the faintest of movements as though sleeping babies twitched or changed position around the mother. Again in late August we were sure there were squirrels in the birdhouse. We had learned there could be a second litter at the end of August or early September.

With flaps extended the underside of the flying squirrel presents a broad, flat surface to the air on which he glides.

An upward flip of the tail and he is in position for a gentle four-point landing.

Photos by L. L. Rue III

The infants are born forty days after mating and the newborn are naked, blind and helpless, weighing less than one-half ounce. Their flying membranes are already developed but at this age are fine, transparent webs of skin. The baby squirrel opens its eyes in a month but is nursed for five weeks. In a couple of months they are able to climb and glide and leave the nest under the mother's care. The family stays together until the following spring.

Never once in the long daylight-saving twilights of the summer did we see flying squirrels around the elearings or in any of the trees. We knew they had to be active in the night for food and exercise but could move so quietly and quickly in the air or on cushioned feet in the trees. that they seemed invisible.

By early November we felt the time had come that we could try to snoop and not disturb a squirrel nursery. We had learned the squirrels do not migrate if their living conditions are satisfactory. The bluebird house that had been used as a squirrel nest was on a cleared slope above our house. Close by it was a ramshackle log structure that we call the

Skylarkers (Continued from page 21)

Goat House which had been so used by a previous owner. This shack was complete with cracks, open, unhinged door and wide slots for windows.

We chose the cool, crisp night of the Full Moon to slip into the shack before dark. A wisp of wind rattled the tin of the roof. The only discernible movement was the drifting earthward of dried leaves with crackling, swishing sounds. In the darkening sky we heard haunting birdcalls as late migrants passed down along the ridges of the hills, going south.

Our eyes grew accustomed to the dark that blotted the last of the the day's light before the moon rose to hang like a honey-colored ball behind the oaks that dripped dry leaves, the bare poplars, and the pines. Reflected light shone from the golden moon, and I greatly feared the night was too bright and the squirrels sensed our presence.

As we stared, a small flying shadow clothed in fur swooped from a tall pine and glided through the air. It then changed course to sail toward the cabin and over its low roof. We could easily see the flattened body, its long sensitive whiskers extended like antenna on the tiny squirrel head. Long folds of furred skin were spread along both sides of the body extending from wrist to ankle. The flaps of skin are not wings, and the squirrel can not fly like a bird with wings. With the flaps extended the underside of the body is greatly enlarged and presents a broad, flat surface to the air. This permits the squirrel to glide swiftly in a diagonal course toward another tree on what appears to be a winged flight.

By a change in the tension of the flaps or the slant of the tail the animal controls its trip through the air. Before landing it flips upward the tail which tilts the body so that it can grasp the tree trunk destination with all four feet. It then scampers up the tree to launch itself off on another glide. The wide, feathery tail seemed to be used for steering. If a fast turn was needed the squirrel could make it. Without the ability to control their flight and without their acute night vision landings would be difficult.

They streaked so quickly from the dark through the light that an actual count was impossible. We thought there were six or eight that swept across the air from tree to tree. On each tree the squirrel scampered up to the height desired, then it plunged off to glide to another tree. They were never static, ever dynamic and somehow very joyful.

We could not see if they fed but we understand their food is varied and includes grains such as corn, seeds, acorns, beechnuts and wild fruits. They also eat many insects, larvae, birds, and their eggs. We suspect the flying squirrels on our place are very much aware of the bird-feeders that are always filled.

We did hear their call. "Chuck, Chuck, Chuck," very like the voice of the gray squirrel. There was some kind of musical chirping, but we could not decide if the squirrels "sang" or if it was a migrant nightbird or just a sound in the night we could not identify.

The life of the squirrel, once they unroll from furry balls of daytime sleep, is so gay and animated as to place the animal in danger. Their vivacity makes them lively targets for owls, hawks and cats. Sadly, they are such gentle shy little beasts with flight as their only means of defense that if they are attacked, or frightened they become terror-stricken and so paralyzed by fear they often die of shock.

Somehow, as we watched the uninhibited airshow in the moonlighted night we knew there was no flight pattern more perfect, more pure, than the exquisite ability possessed by each soft, wild bundle of fur to volplane through the air and become an example of glider aviation at its finest.

TWO THOUSAND MILE FOOTPATH

By WALLACE OBAUGH
Hinton

VIRGINIA has more of the Appalachian Trail than any other state—462 miles of it. This 2000 mile long footpath, winding from Mount Katahdin in Maine to Georgia's Springer Mountain, crosses the Potomac into Virginia just east of Harper's Ferry. It climbs quickly to the crest of the Blue Ridge, which it follows, generally speaking, almost down to Roanoke. A few miles north of there it crosses the Valley westward and again runs southwest along the ridges to North Carolina and the Great Smoky Mountains.

In a straight line this distance is about 350 miles. The

other 112 are used up in curves and switchbacks. Most of these hilly miles meander through the Shenandoah National Park and the George Washington and Thomas Jefferson National Forests.

In the Park, the Trail has been improved and is maintained by the Park Service. In some places, especially near visitor centers, it has been graded and cleared of obstacles so that it can be enjoyed by anyone, from grandmother to the youngest toddler. But if you want rougher hiking it is not far away. The trail has something for everybody.

There are also side trails, ranging from a few yards to a few miles long. These lead to picturesque waterfalls, high rocky lookout points, and other fine places. Most of them are in loops, so that you can either go back to where you left the Trail or rejoin it farther on. Each is named for its chief item of interest, the Rose River Falls Trail or the White Oak Canyon Falls Trail.

In the spring, this section of the Trail is a paradise for wild flower fanciers. It passes through whole plantations of violets, trillium, and wild geraniums. Columbine, bloodroot, mayapple and jack-in-the-pulpit are less flamboyant, but they are there too, along with many more less well-known species. At the right times and places there are riotous bloomings of crab apple, dogwood, azalea and rhododendron.

Spring is also the best time for bird watching along the Trail. The local nesters have settled down to the serious business of the year, and the northerners are still passing through. You have a good chance of seeing or hearing your favorite songster. Larger members of the feathered tribes are present too. Grouse let you come quite near before they flush, and their exploding takeoff from near at foot is all the more startling. You can also hear their clucking talk and drumming from farther away in the woods. The shyer turkeys, although present, are more secretive. Bird voices

almost silenced throughout most of Virginia still echo here. At night the plaintive calls of whippoorwills are answered by the melancholy basso of hootowls; in the daytime one is almost certain to hear the guttural croaking of ravens.

Mammals, too, are in evidence. The protection given them by the Park has made them both tamer and more abundant.

Deer have responded most to the protection, and are an especial delight. They usually let you come almost up to them before they move, then bound leisurely 30 to 40 yards into the trees and stand to watch you pass. They seem to enjoy human company. On my last hike along the Trail a companion and I counted 14 in a little over 20 miles. They were mostly does and juveniles; even here the bucks show their characteristic wariness.

Bears are different. You seldom see one in the woods, although the amount of their sign — "huckleberry pies" in season, pillaged yellow jackets' nests, and rocks overturned in search of some little bite of protein — indicate a good population. They are not too friendly, even among themselves, and want their elbow room and privacy. The few characters that hang around camping areas, begging and scrounging food, are exceptions. They have sold their birthrights for a mess of pottage.

A bear figured, in a contributory way, in my most exciting adventure on the Trail. He had dug up a yellow jacket's nest to get at the grubs in it. As I rounded a bend I saw the torn and plundered white paper nest on the path, with some very angry pellets of winged vengeance circling above it. They saw me at the same time I saw them. My memories of that meeting are painful.

The Appalachian Trail is for walking. Horses and motor vehicles are discouraged, and in some places forbidden.

The other game and non-game animals, smaller and mostly of a retiring nature, are less visible. The exception is the chipmunk. He is all over, scurrying across the Trail and climbing rocks and logs to see the biped intruder. Where you don't see him you hear him chirping his bird-like note, and rattling through dry leaves like something forty times bigger.

On or near the Trail I have seen rabbits, squirrels, woodchucks and skunks. The more elusive night prowlers, foxes, raccoons, bobcats and opossums, leave evidence of their passing.

The Appalachian Trial was put together between 1922 and 1937. Parts of it had already been made by hiking clubs,

Typical trail marker. A good place to get on the trail is where U. S. Route 33 goes through Swift Run Gap.

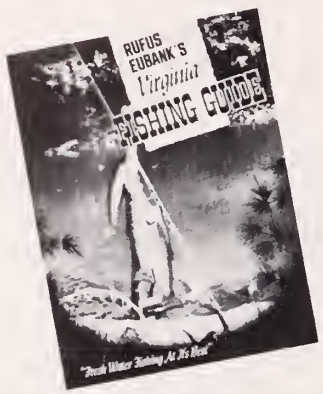
government agencies at various levels, and other interested groups. These sections were mostly in New York and New England, where increasing population densities first pointed out the need for escape routes into the woods. In 1921 Benton MacKaye publicized the idea of uniting them and using them as a nucleus of a continuous, Appalachian-long hiking trail. To him, perhaps more than anyone else, goes the credit for the 2000 mile long sylvan avenue.

At first the Trail was marked with metal squares about 4 inches wide containing a monogram of the letters A and T, tacked corner-wise on trees. Later the mark was changed to a white paint blaze. Some of the old signs survive; in a few places the old and the new may be found together.

Wherever possible, the Trail is routed over public land, but in some places it must of necessity go over private holdings. In some cases permission to cross these areas has been given on a temporary basis, and may be withdrawn. Here is where we can all help. Where the signs say STAY ON THE TRAIL, stay on it. Remember that you are a guest, and behave yourself in such a way that you will be welcomed back.

Edited by HARRY GILLAM

New Fishing Guide Available



This is the fist issue of a new magazine called "Virginia Fishing Guide." It is now published annually but the publisher, Jerry Bagby, hopes to go to semi-monthly issues eventually. The 40-page book features articles on Smith Mountain, Kerr Reservoir, Carvins Cove and Virginia trout streams. It includes a 2-page map of Smith Mountain and Leesville Lakes with the hot spots for various species marked. Also included are tackle tips, boat tips, methods of cleaning fish and other items the outdoorsman would expect to find in such an outdoor magazine. The first issue is devoted primarily to reservoir fishing with emphasis on Smith Mountain.

Many of the articles are by or about fishing guide Rufus Eubank who has gained quite a reputation guiding parties on Smith Mountain Lake. He collaborated with Bagby on his initial outdoor publishing venture, Rufus Eubank's Smith Mountain Lake Guide.

The new Virginia Fishing Guide is available from the publisher, Jerry L. Bagby, 113 Wayne Drive, Lynchburg, Virginia 24505, for $1.25 per copy.

Registration Law Generates Backlash

The 1968 Gun Control Act has generated some repercussions in the current session of Congress. Most of those taking issue insist that the Treasury Department went beyond the intent of Congress in drafting their interpretation of the law. On January 24 Representative Durward Hall of Missouri made a statement for the *Congressional Record* including the following:

"The Treasury has grossly misinterpreted the will and intent of Congress. They have created a bureaucratic monster that creates 'backdoor' or 'defacto' gun registration. The Congress specifically and decisively defeated an amendment last year that would provide for gun licensing and registration. I, with an overwhelming majority, voted against such a proposal.

"Mr. Speaker, in addition to the 'defacto' registration feature to the Treasury regulations, a clerical and 'redtape' burden has again been placed upon our businessmen. It would be difficult to estimate how many Goverment forms they must already fill, complete, and file. Now, we are adding one more.

"To correct this inequity, clerical burden and runaway interpretation, I am introducing a bill that would change the definition of 'ammunition' in the Gun Control Act of 1968 so that shotgun shells, metallic ammunition suitable for use only in rifles, or any 22 caliber 'rimfire' ammunition would be exempted from the Treasury regulation."

On February 17 Senate Majority Leader Mike Mansfield of Montana made the following comments on the Senate floor:

"Mr. President, on February 4, the distinguished senator from Utah (Mr. Bennett) introduced S. 845. It seems to me to indicate that registration by another name is required by a regulation of the Internal Revenue Service. This regulation covers ammunition for pistols, rifles, shotguns and some components, including primers, propellent powders, cartridge cases and bullets.

"——— the regulations issued by the Secretary of the Treasury call for the following: date; manufacturer; caliber, gauge, or type of component; quantity; name; address, date of birth; and mode of identification, driver's license, and so forth.

"It seems to me that this goes far beyond 'the name, age, and address' of the law and covers a good deal more territory which, in effect, amounts to registration.

"If there is to be registration, let it be in the open and on the table, and let everyone be aware of it. Congress, in my opinion, opposed registration under the Gun Control Act of 1968, and this regulation, in my judgment, would go far beyond what Congress intended.

"This is back-door registration and should be corrected. In my judgment, it is necessary to correct an unnecesary burden and a deceptive form of registration and to bring the regulation in line with the intent of Congress at the time the bill was passed.

"I ask unanimous consent that I be registered as a co-sponsor of Senator Bennett's bill, S. 845."

Sportsman's Survey Forms Mailed

Questionnaires were mailed to some 8,000 Virginia hunters in early March as part of the second Virginia Game Survey by the Virginia Commission of Game and Inland Fisheries. The survey will cover the 1968-69 season just ended. The new form for this year's query is a simple postage paid card with boxes to check rather than the more complicated 7-page form used in the 1965-66 survey.

The first survey yielded positive information about hunter preference and success which were previously only guessed at. The number of hunters interested in each of the Virginia game species and the amount of effort expended on each were pinned down with statistically sound estimates. The new survey will refine these estimates and point up trends in hunting activity during the 2 year interim period.

The returned questionnaire cards will be processed by the Game Commission's own Data Processing Section. Since sportsmen who receive this form will be answering for approximately 50 of their fellow hunters, they are urged to fill out the cards completely and accurately and return them promptly.

Edited by ANN PILCHER

Warden Supervises New Kent 4-H Project

"Al" Cochran Studio, Highland Springs

Following study about various types of wildlife, New Kent 4-H'ers worked under the supervision of State Game Warden R. L. Griffith in constructing purple martin and wood duck nesting boxes.

Shenandoah's Youth and Adults Work Together for Wildlife

Already more than 30 boys and girls have indicated a desire to participate in the 1969 4-H Wildlife Food Planting Contest. This year, too, junior 4-H Clubs are carrying Wildlife as a project. Junior and senior club members study about conservation of wildlife habitat, view movies concerning "balance of nature," and learn to construct bird and wildlife feeding stations. Mr. Glenn R. Dudderar, V. P. I. Extension Wildlife Specialist, has scheduled two field trips for the clubs. Long range plans in Shenandoah County include a proposed conservation camp in which young people will be exposed to an intensive study of wildlife.

Kenneth Brill (SCS Conservation Aide), John Pangle (4-H parent), and William H. Fadely (Shenandoah Game and Fish Association President), during 1968 judging of wildlife plots.

Last November the following young people received awards at the Shenandoah County 4-H Achievement Program as 1968 planting contest winners: *Champion Member Plot* (trophy): Karen Fansler; *Blue Ribbon* ($6.00)—Karen Fansler, Michael Weaver, Karen Pangle; *Red Ribbon* ($4.25) Pattie Johnson, Charles Johnson, Dennis Morris, Monty Loving; *White Ribbon* ($2.25)—Lester Ritenour, Troy Tamkin, Freddie Miller, Cecil Miller, Wayne Himelright, George Walker. The contest was sponsored by the Shenandoah County Game and Fish Association, Inc., seed furnished by the Game Commission, planning and planting supervised by Mr. John D. Cutlip, 4-H Extension Agent.

William H. Fadely, President
Shen. Game & Fish Assoc., Inc.

VIRGINIA FEDERATION OF GARDEN CLUBS, INC.

A CAMP WHICH AFFORDS EXCELLENT OPPORTUNITIES
FOR DEVELOPING FUTURE CONSERVATION LEADERS

CAMPING DATES — 1969

June 22—July 5 .....Grades 9-10-11-12
July 6—July 19 .....Grades 7-8
July 20— August 2 .....Grades 6-7
August 3—August 16 .....Grades 5-6

PLEASE NOTE: Seventh graders applying for the second camp must have attended Nature Camp before and the sixth graders applying for the third camp must have attended before. The grades refer to the school grade in which you are AT PRESENT and NOT to the one which you will enter in the fall.

CAMP FEE: $90 per session

For APPLICATION BLANKS write to MRS. FRED SCHILLING, Executive Director, Box 148, Route 2, Afton, Va. 22920.

What is Camp?

Is camp people, classes, buildings or just fun to you? I hope it's more! Like the joy of knowing that here you are given the opportunity to learn about God's creation and how it works. Camp, what is camp? The bird walks and classes? Sure we have classes, but didn't we come here to learn as well as have a good time? Camp, what is camp? A place where you can learn about God and how he works through his creation, and once more we learn it in a beautiful part of God's creation that hasn't been destroyed by man and some of his careless ways.

God, this day we ask thee to help us to be good to all living things. Most of us realize that you made this earth for all men to love, enjoy and cherish.

Now we beg you to give us the strength to go out and teach others what we can about your creation. To tell them of all the beauty that the earth holds, the trees, flowers, mountains, and waterfalls. Help us Lord to do this. So that all mankind can benefit from our knowledge.

—Penny Meade

Edited by JIM KERRICK

Boat-Camping Yields Double Vacation Fun

An outboard motor and boat adds new fun and freedom to any camping adventure.

Fishing, exploring, water skiing or just plain relaxing on the water are the perfect change of pace from the camping routine. And if the campsite is "tent stake to tent stake," you can load up the boat, start your outboard and be off to a new area in minutes.

Even boating families, once restricted to modern marinas and well-traveled waterways, are striking out with camping gear to find new adventure. It's the perfect combination vacation.

Where you go and how long you stay depends on your equipment and your experience at the helm and around the campsite. However, a little common sense and planning can be a good substitute for the novice outdoorsman.

A 16- or 17-foot outboard cruiser is a must if you're planning an extended camping cruise. You can "stretch" this space by selecting camping equipment that stores compactly.

Thanks to sleeping bags and air mattresses, sleeping aboard can be fun, but don't plan on doing it every night. Even the largest boats can get confining after a few days. Here's another tip: never attempt to travel too far in a single day. Pace yourself, take short breaks and put ashore often. If you've got children aboard, this is a must.

It goes without saying that your equipment should be in topnotch condition. An overnight or weekend shakedown cruise is a good way to check performance and have a good time doing it. Your tent, sleeping bags and air mattresses should also be inspected.

Extra fuel, fresh water and food can all be problems unless you plan ahead. Hundreds of maps are available from major oil companies, state agencies and local tourist bureaus which pinpoint marine and service facilities. You can also use these maps to select campsites along the way. One night you might enjoy the camaraderie of a public campground. The next night you can select an isolated wilderness area.

Photo courtesy Evinrude Motors

Boating families once restricted to marinas and well traveled waterways are striking out with camping gear to find new adventure. It's the perfect combination vacation.

The umbrella, explorer and "pop" tents are the most popular with boat-campers. Their biggest advantage is compact storage. When selecting a tent, consult an experienced camper or sporting goods salesman. Make sure it will be large enough to store all your gear and sleep the entire family comfortably. On rainy nights you just might find yourself in this position.

Another important consideration is set-up and tear-down time. Don't select a tent that takes six strong men to handle. With the wealth of equipment on the market today, you shouldn't have any trouble finding the right style, size and price range.

Boat-camping with a cartop fishing rig can be just as much fun as exploring wilderness areas in a large cruiser. Once you've established a permanent camp, use the boat and motor to break the routine. You might try your hand at fishing. Who knows, if your luck is right, you might save on the food bill. Besides that, it's hard to beat the flavor of a fresh fish filet cooked over an open fire.

Even though you can't take long trips with a cartopper, this rig still gives you greater freedom. You can unload the boat anywhere along the route and continue on for short distances by water, or relocate your campsite if you like.

The basic checklist of camping equipment is pretty much the same whether you'll be out for a weekend or two weeks. Don't leave anything to chance. Make a written list and check off each item as it is packed into the boat or car. Here's a list of some of the major items: a trench shovel; a small "children's" broom; plenty of extra rope; basic cooking utensils; frying pan and sauce pans; small hand axe and sharp cutting knife; and waterproof tarpaulin or suitable floor covering. Select your clothing to suit the area you plan to visit.

Bird of the Month:

Duck Hawk

By DR. J. J. MURRAY
Lexington

THIS month we come to one of the handsomest birds of our state. For speed, for power, and for grace there is no finer Virginia bird than the duck hawk. It is one of this writer's favorite birds. The red-tailed and red-shouldered and marsh hawks and the osprey are larger, but none of them are so powerful. And when it sets its wings and goes into a power dive, none of our hawks is so fast.

Its scientific name *Falco peregrinus anatum*, is descriptive. It is a falcon, with slender, pointed wings and rapid wing strokes. The name falcon refers to the sickle-shaped talons. The middle name, of course, means traveler or wanderer. And the last part, *anatum*, refers to duck, one of this hawk's favorite foods. In Europe this bird is given a much better common name than our term, duck hawk. It is known there as the peregrine falcon. Roger Tory Peterson, writer of the widely used book, *A Field Guide to the Birds*, hopes that in this country we can come to use peregrine falcon as the name of this fine bird.

While the duck hawk is found all over Virginia it is not common anywhere in the state. On the Eastern Shore, according to F. R. Scott, it is fairly common at places in fall, and scarce to rare in winter and spring. Twenty years ago, according to F. M. Jones, there were two occupied nests near the coast. A few years ago, a pair nested successfully somewhere around St. James Episcopal Church in Richmond.

In "The List of Birds of the Shenandoah National Park" (third revision, 1950) Dr. Alexander Wetmore stated that "One or more pairs nest in the Park, others pass in migration." He also told in another place how a duck hawk watched the inaugural parade of President Hoover from the tower of the Post Office building in Washington. The bird is somewhat more common as one goes west in Virginia. There have been breeding places in Rockbridge County.

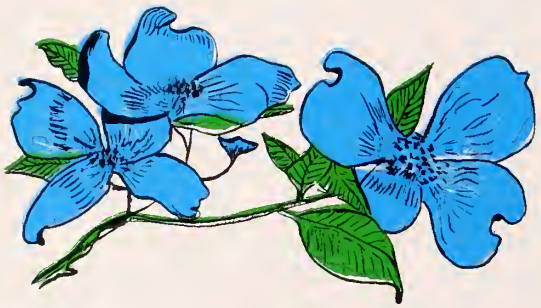
In Europe the duck hawk has been widely, and in this country occasionally, used in falconry. With its speed it can overtake any bird against which it is loosed.

Adult duck hawks are dark bluish-slate above, barred with black, and creamy-buff below, also barred there with black. The cheeks are black. The wings are slender and pointed.

All in all this is a grand bird. Its attack on pigeons when it roosts in one of our cities is very welcome. It is well worth preserving in spite of the loss of an occasional flicker or duck in the wild.

NATURE'S GARDEN

by WILLIAM D. RODGERS, JR.



DOGWOOD

PAINTED TRILLIUM

ARROWHEAD

JACK-IN-THE-PULPIT

HEPATICA

SWEETBAY

TULIPTREE

GROUNDNUT

LADY'S SLIPPER